

1. A spinal plating system, comprising:

an elongate plate including a length extending along a longitudinal axis adapted to span a space between adjacent vertebrae, said plate including a first connection portion attachable to a first one of the adjacent vertebrae and a second connection portion attachable
5 to a second one of the adjacent vertebrae, and an intermediate portion extending between said first and second connection portions, said intermediate portion including a visualization opening extending therethrough for visualizing the space when said plate is attached to the adjacent vertebrae, said visualization opening including at least one convexly curved side wall extending along the longitudinal axis.

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2. The plating system of claim 1, wherein said visualization opening includes a second convexly curved side wall opposite the at least one convexly curved side wall.

3. The plating system of claim 1, wherein said plate includes an outer wall

15 surface along said intermediate portion, said outer wall surface having a concave curvature along said convexly curved side wall of said visualization opening.

4. The plating system of claim 1, wherein said visualization opening includes an hourglass shape.

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5. The plating system of claim 1, wherein said intermediate portion includes a first member along one side of said visualization opening and a second member along the

opposite side of said visualization opening, said first and second members extending between said first and second connection portions.

6. The system of claim 5, wherein said first member includes said at least one
5 convexly curved side wall of said visualization opening and a concavely curved outer wall surface of said intermediate portion.

7. The system of claim 6, wherein said second member includes a second
convexly curved side wall of said visualization opening opposite said at least one convexly
10 curved side wall of said visualization opening and a second concavely curved outer wall surface of said intermediate portion.

8. The system of claim 7, wherein said first and second members each include a
first width between respective ones of said concavely outer wall surface and said convexly
15 curved side wall of said visualization opening.

9. The system of claim 8, wherein said visualization opening includes a second
width between said convexly curved side walls, said second width being greater than said first
width.

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10. The system of claim 9, wherein said second width is at least as great as the
combined first width of said first and second members.

11. The system of claim 5, wherein said first and second members are integrally formed with said first and second connection portions.

12. The system of claim 1, wherein said visualization opening includes:
5 a convexly curved side wall opposite said at least one convexly curved side wall; and
an upper end wall and an opposite lower end wall extending between said side walls.

13. The system of claim 12, wherein said upper end wall and said lower end wall are concavely curved.

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14. The system of claim 1, wherein said visualization opening is centered on said longitudinal axis of said plate.

15. The system of claim 1, further comprising a fusion member positionable in the
15 space between adjacent vertebrae, said fusion member being visible through said visualization opening when said plate is attached to the adjacent vertebrae.

16. The system of claim 1, further comprising a holding instrument engageable to said plate, said holding instrument operable to apply a clamping force between an outer wall
20 surface of said plate and a wall of said visualization opening adjacent said outer wall surface.

17. The system of claim 16, wherein said holding instrument includes a holding system including first and second holding members to apply said clamping force to said plate.

18. The system of claim 1, wherein each of said connection portions includes a pair of openings each for receiving a bone anchor therethrough to attach said connection portion to the respective adjacent vertebrae.

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19. The system of claim 18, wherein each of said connection portions includes a retaining device engageable to said plate to prevent said bone anchors in said pair of openings from backing out of said plate.

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20. A spinal plating system, comprising:

an elongate plate extending along a longitudinal axis and including a length along the longitudinal axis adapted to span a space between adjacent vertebrae, said plate including a first connection portion attachable to a first one of the adjacent vertebrae and a second connection portion attachable to a second one of the adjacent vertebrae, and an intermediate portion extending between said first and second connection portions, said intermediate portion including a visualization opening extending therethrough for visualizing the space when said plate is attached to the adjacent vertebrae, wherein said intermediate portion includes a first member along one side of said visualization opening and a second member along the opposite side of said visualization opening, wherein said first and second members each include a first width between an outer side surface of said plate and an inner side wall of said visualization opening, said visualization opening including a second width between inner side walls of said first and second members, said second width being greater than the combined first width of said first and second members.

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21. The system of claim 20, wherein at least one of said inner side walls of said visualization opening is convexly curved along the longitudinal axis.

5 22. The system of claim 21, wherein said outer side surfaces of said first and second members are concavely curved along the longitudinal axis adjacent said visualization opening.

10 23. The system of claim 20, wherein said second width is in the range from 100 percent to 125 percent of the combined first width.

24. The system of claim 20, wherein said visualization opening includes a length along said longitudinal axis of said plate, said visualization opening including a length-to-width ratio ranging from 1.0 to 2.5.

15 25. The system of claim 20, wherein said visualization opening includes a length along said longitudinal axis of said plate, said visualization opening including a length-to-width ratio ranging from 1.0 to 1.5.

20 26. The system of claim 20, wherein said visualization opening includes a length along said longitudinal axis of said plate, said visualization opening including a length-to-width ratio ranging from 1.5 to 2.25.

27. The system of claim 20, wherein said visualization opening includes a length along said longitudinal axis of said plate, said visualization opening including a length-to-width ratio ranging from 1.0 to 2.0.

5 28. A system for stabilizing a portion of the spinal column, comprising:
a plate including a length extending along a longitudinal axis and comprising at least a first end wall and a second end wall each extending transversely to said longitudinal axis; and
a holding instrument including a remotely actuatable holding system adapted to hold the plate with a clamping force between said first and second end walls.

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29. The system of claim 28, wherein said first end wall forms an outer end surface of said plate and said second end wall is an end wall of a visualization opening extending through said plate.

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30. The system of claim 29, wherein said visualization opening includes at least convexly surface side wall extending along said longitudinal axis of said plate.

31. The system of claim 28, wherein said holding system is adapted to hold said plate along said longitudinal axis of said plate.

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32. The system of claim 28, wherein said holding instrument includes a proximal handle system and a connecting system operably connecting said holding system to said handle system.

33. The system of claim 28, wherein said first end wall is concavely curved and said second end wall is concavely curved, said holding system comprising a first holding member including a convexly curved plate contacting surface adapted to conform to the
5 concavely curved first end wall and a second holding member including a convexly curved plate contacting surface adapted to conform to the concavely curved second end wall.

34. The system of claim 28, wherein said holding system includes a stationary second holding member and a first holding member pivotally attached to said second holding
10 member and movable relative thereto between a clamping position and a release position.

35. The system of claim 34, wherein said first holding member includes a proximal portion including a first end pivotally attached to said second holding member, said proximal portion extending transversely to said second holding member, said first holding member
15 further including an intermediate portion extending from a second end of said proximal portion opposite said first end, said intermediate portion extending generally in the direction of said second holding member and forming a space with said second holding member to facilitate viewing of a portion of said plate clamped between said first and second holding members.

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36. A spinal plating system, comprising:
a plate extending along a longitudinal axis, said plate having at least one bone engaging fastener hole offset to one side of said longitudinal axis;

a holding instrument comprising:

an actuating system;

a holding system operably coupled to said actuating system, said holding system including first and second holding members movable with said actuating system between a release position and a clamping position to selectively engage and release said plate therebetween along said longitudinal axis thereof; and

a guide mechanism along said actuating system including at least one guide member, wherein with said at least one guide member positioned relative to said plate to guide placement of a bone engaging fastener through said at least one hole.

37. The system of claim 36, wherein:

said plate includes a pair of bone engaging fastener holes positioned on opposite sides of said longitudinal axis; and

said guide mechanism includes a pair of guide members alignable with respective ones of said first and second bone engaging fastener holes, said first and second holding members being positioned between said pair of guide members.

38 The system of claim 26, wherein said holding instrument further comprises an alignment mechanism adjacent said holding system and distal of said guide mechanism, said alignment mechanism including at least one alignment member extending laterally from said holding system along said at least one bone engaging fastener hole of said plate.

39. An instrument for holding an implant along a longitudinal axis of the implant, comprising:

an actuating system;

a connecting system extending proximally from said actuating system; and

5 a holding system at a distal end of said connecting system operably coupled to said actuating system with said connecting system, said holding system including first and second holding members moveable in the direction of the longitudinal axis of the implant with said actuating portion between a release position and a clamping position to selectively engage and release the implant.

10 40. The instrument of claim 39, further comprising a guide mechanism along said connecting system.

41. The instrument of claim 40, further comprising an alignment mechanism
15 adjacent said holding system and distal of said guide mechanism.

42. The instrument of claim 40, wherein said guide mechanism includes a first guide member along one side of said connecting system and a second guide member along the other side of said connecting system.

20 43. The instrument of claim 42, wherein said holding system is movable in a plane extending between said first and second guide members.

44. The instrument of claim 39, further comprising a locking system at said actuating system to secure said holding mechanism in any one of a number of clamping positions.

5 45. The instrument of claim 39, wherein said first holding member is pivotally coupled to said second holding member and said second holding member is stationary.

46. The instrument of claim 45, wherein said connecting system includes a first member and a second member, said second holding member forming a distal integral
10 extension of said second member.

47. The instrument of claim 45, wherein said connecting system includes a linkage movable relative to said second member with said actuating system, a distal end of said linkage being coupled to said first holding member and said linkage being translatable relative
15 to said second member to pivot said first holding member relative to said second member.

48. The instrument of claim 47, wherein said connecting system includes a second member comprising a channel oriented toward said second member, said linkage being movably received in said channel.

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49. The instrument of claim 47, wherein said linkage includes a distal camming surface positionable against a proximal end surface of said first holding member with said holding system in said clamping position.

50. The instrument of claim 39, wherein said actuating system includes a first handle portion pivotally coupled with a second handle portion.

5 51. The instrument of claim 50, wherein said first handle portion is linked with said first holding member, said first handle portion being movable relative to said second handle portion to pivot said first holding member relative to said second holding member.

10 52. The instrument of claim 51, further comprising a second member extending from said second handle portion to said second holding member, said second handle portion, said second member, and said second holding member being stationary as said first holding member is moved relative to said second holding member.

53. The instrument of claim 39, wherein:
15 said first holding member comprises a first engagement member including a first contact surface; and
said second holding member comprises a second engagement member including a second contact surface.

20 54. The instrument of claim 53, wherein said first contact surface and said second contact surface are curved to conform to a curvature of a surface of the implant to which said first and second engagement members are engaged.

55. The instrument of claim 54, wherein said first and second contact surfaces are convexly curved.

56. The instrument of claim 53, wherein:

5 said first engagement member includes a distal flange and a proximal flange spaced from one another by said first contact surface; and

said second engagement member includes a distal flange and a proximal flange spaced from one another by said second contact surface.

10 57. The system of claim 53, wherein said first contacting surface and said second contacting surface are oriented transversely to the longitudinal axis of the implant when engaged thereto.

58. The system of claim 39, wherein said first holding member includes a proximal
15 portion including a first end pivotally attached to said second holding member, said proximal portion extending transversely to said second holding member, said first holding member further including an intermediate portion extending from a second end of said proximal portion opposite said first end, said intermediate portion extending generally in the direction of said second holding member and forming a space with said second holding member to
20 facilitate viewing of a portion of the implant clamped between said first and second holding members.

59. A spinal plating system, comprising:

an elongate plate including a length extending along a longitudinal axis adapted to span a space between adjacent vertebrae, said plate including a first connection portion attachable to a first one of the adjacent vertebrae and a second connection portion attachable to a second one of the adjacent vertebrae, and an intermediate portion extending between said
5 first and second connection portions, wherein said intermediate portion is comprised of a translucent material for visualizing the space when said plate is attached to the adjacent vertebrae

60. The system of claim 59, wherein said intermediate portion further includes at
10 least one visualization opening for visualizing the space.

61. The system of claim 60, wherein said visualization opening includes at least one convexly curved side wall extending along the longitudinal axis.

15 62. The system of claim 59, wherein said entire plate is comprised of translucent material.

63. A method for positioning a plate adjacent a spinal column of a patient, comprising:
20 accessing at least two vertebrae of the spinal column;
holding the plate along a longitudinal axis of the plate with a holding instrument; and
positioning the plate on the at least two vertebrae.

64. The method of claim 63, wherein holding the plate includes holding the plate between an end wall of the plate and an end wall of a visualization opening extending through the plate.

5 65. The method of claim 64, further comprising inserting a fusion device between the at least vertebrae before positioning the plate.

66. The method of claim 65, further comprising visualizing the inserted fusion device through the visualization opening.

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67. The method of claim 63, further comprising securing the plate to the at least two vertebrae with bone engaging fasteners extending through the plate.

68. The method of claim 67, further comprising guiding the bone engaging
15 fasteners through a guide mechanism comprising a portion of the holding instrument.

69. The method of claim 67, further comprising securing the bone engaging fasteners to the plate with at least one retaining device.

20 70. An instrument for holding a plate with at least one hole for receiving a fastener, comprising:

an actuating system;

a connecting system extending proximally from said actuating system;

a holding system at a distal end of said connecting system operably coupled to said actuating system with said connecting system, said holding system operable to selectively engage and release the plate;

5 a guide mechanism along said connecting system aligned with the at least one hole with said holding system engaged to the plate; and

an alignment mechanism adjacent said holding system and distal of said guide mechanism, said alignment mechanism include at least one alignment member aligned with the at least one hole with said holding system engaged to the plate.

10 71. The instrument of claim 70, wherein said guide mechanism includes at least one guide member including a passage aligned with the at least one hole and said at least one alignment member includes an alignment surface providing an extension of at least a portion of said passage.

15 72. The instrument of claim 70, wherein said at least one alignment member includes an arm with a curved end portion offset laterally from said holding system.

73. The instrument of claim 72, wherein said at least one alignment member includes an alignment surface extending along said curved end portion.

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74. The instrument of claim 70, wherein said at least one alignment member is integrally formed with a first holding member of said holding system.

75. The instrument of claim 70, wherein said guide mechanism is positioned along said connecting system to provide a space between said guide mechanism and said alignment mechanism.

5 76. The instrument of claim 70, wherein said at least one alignment member extends about a first portion of the at least one hole to provide unobstructed viewing of a second portion of the at least one hole, the second portion opposite the first portion.

77. The instrument of claim 70, wherein said alignment mechanism includes a pair
10 of alignment members extending from said holding system in opposite directions.

78. The instrument of claim 77, wherein each of said alignment members comprises an arm extending from a member of said holding system, each of said arms including a curved end portion spaced laterally from said holding system.

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79. The instrument of claim 78, wherein each of said arms includes an alignment surface alignable with a portion of an adjacent hole in the plate.

80. The instrument of claim 70, wherein said holding system is engageable to the
20 plate along an axis adjacent the at least one hole and said at least one alignment member extends laterally toward the at least one hole when said holding system is engaged to the plate.